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ABSTRACT

As the community colleges in New York state grew in the post World War II period, they continued to maintain close links with local firms and a commitment to provide occupational education. In the 1970s, a traditional balance between career and transfer programs shifted towards programs that led directly to employment, and currently more than 60% of the state's two-year college students are enrolled in career programs. In the 1980s, a key challenge for community colleges will be to respond to the increasing demand for skilled employees in high technology areas. The State University of New York (SUNY) has created three methods to finance these often expensive programs: (1) a funding formula providing state aid for colleges that includes bonus dollars for students in business and technology programs; (2) state funding for non-credit courses that are vocationally oriented; and (3) state aid for contract courses with business, industry, and labor groups. Other efforts to establish links between SUNY and local firms include joint programs supported through public and private funds to benefit small firms and individuals seeking high technology employment. The rejuvenation of technical training at community colleges can be seen in the growth of the number and variety of career programs and the number of students in these programs. Attachments list occupational programs approved by SUNY since 1976, 1976-80 occupational enrollment figures, and contract course approvals. (HB)

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THE ROLE OF SUNY'S COMMUNITY COLLEGES IN TECHNICAL/OCCUPATIONAL EDUCATION

Analysis Paper No. 821
State University of New York
Office for Community Colleges

March, 1982

JC 820 176

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The Role of SUNY's Community Colleges
in Technical/Occupational Education

The community college, one of the chief American innovations in higher education history, dates back to the beginning of this century, but really had little sustained growth or sense of identity until after mid-century, when a revolution in education surfaced in response to the accelerated pace of technological developments and the requirements of educational opportunity for all citizens. Following World War II, there were seemingly insatiable demands for workers with skills to handle the new technologies, and higher education itself changed from a privilege for a few to a rightful goal for all.

In New York State, a handful of public technical institutes and two-year colleges began to flourish in Utica, Troy, Buffalo, Binghamton, Jamestown, White Plains and New York City. These institutions, later to become the first SUNY community colleges, had a prime purpose of serving returning veterans and others by providing career programs and, more particularly, specific occupational skills. Moreover, the skills taught were especially appropriate to the needs of local business and industry.

Although throughout the 1950's and 60's two dozen more community colleges were established and a much more comprehensive series of curricula developed (including the first two years of a baccalaureate education for students wishing to transfer and a wide range of continuing education programs), the former technical institutes and the 24 other community colleges never forgot their real roots and the mission to provide skilled blue-and-white collar workers for local firms. Throughout the period from the late 1950's through the 1970's, an incredible variety of occupational programs were begun at campuses all over the State and, for the first time in history, New Yorkers could enroll in low-cost, associate degree or certificate programs close to home in such fields as advertising, automotive technology, dozens of business options, civil technology, computer technology, engineering technology, mechanical technology, electrical technology, a wide variety of health service programs, food service, industrial technology and the like. More than 200 different career options were available statewide, with each college offering those curricula most appropriate to the businesses and industries of the region served.

Gradually, throughout the 1970's, the traditional balance between career and transfer programs began to shift toward the programs which led directly to employment, partially as a result of difficult economic conditions for families (with more and more adults returning to the classroom to improve skills or begin training for a career). During the late 1960's and early 1970's, most SUNY community colleges reported that about half of their students were enrolled in transfer programs. But year by year during the late 1970's, fewer students prepared for transfer and more sought job

skills. Currently more than 60 percent of the students are enrolled in career programs statewide. Some colleges report even higher percentages. It should be noted that the State University approval process for new community college programs includes documented proof by the colleges of the need for skilled graduates from such programs, sufficient interest by prospective students from the local area to enroll, and the resources to support a high quality program.

As the community colleges enter the 1980's, it is obvious that they are reacting to new needs of business and industry, especially in the area of high technology, a phenomenon which is characterized by research and development activities, stressing more light manufacturing, computer operations and office work, rather than the heavy manufacturing. Because of the emphasis on research and development activities, high technology can be viewed as an ideal marriage of higher education and industry. Although it is obvious that such industry requires substantial numbers of engineering and other graduates of bachelor's and graduate programs, there is also a requirement for at least as many highly trained blue-collar workers such as computer operators, tool and die makers and the like. As they have done throughout their history, community colleges, with the assistance of SUNY and the rest of State government, are reacting to the needs of high technology firms by adjusting existing programs and beginning new ones which provide skilled employees.

The State of New York, recognizing the long and successful partnership of community colleges and business and industry, has created three methods to finance these often expensive programs:

> The funding formula which provides state aid for the colleges (based upon the number of students enrolled) has included bonus dollars to the colleges for students in business and technology programs with the understanding that (1) the economic development of the State is enhanced by the graduates of such programs and (2) the cost of instruction for such programs is usually more than that of other programs.
>
> The State allows funding for non-credit courses which are vocationally oriented. It is estimated that more than 50,000 New Yorkers are enrolled in such state-supported non-credit courses, many urged by their employers to do so and many others enhancing or beginning careers on their own. As the courses are approved by SUNY Central Administration for state-aid eligibility, a statewide review of these activities is possible. By far the largest number of courses approved are in techni-

cal areas, with dozens in the health sciences, the technologies (electrical, mechanical, civil, etc.), office practices and the like.

Beginning in 1981, the State allowed aid for contract courses with business, industry and labor groups as an extra incentive for both the colleges and the firms to design customized courses and programs for employees which indirectly insure the financial health of the firms. Such aid for contract courses was previously prohibited. Initial reports indicate that already thousands of employees are enrolled in such contract courses. Although the largest single contract (with Erie Community College) serves the Buffalo area through the General Motors plant there, dozens of other firms are being served statewide in numerous other fields. A list of firms served and courses offered is attached to this report.

The rejuvenation of technical training for work at the community colleges can be seen in statistics which document the growth in (a) the number of career programs, (b) the variety of these curricula, and (c) the number of students in career programs, all during the past several years. The attachments to this paper clearly reveal that the unique helping relationship between SUNY community colleges and the business and industrial world is flourishing. More than 100 new career programs have been created since 1976, including those in industrial instrumentation technology, mechanical design, machine tool technology, data processing management, computer technology, medical laboratory technology, chemical technology and materials science technology. The number of students in career programs has grown from 84,814 to 93,360, an increase of about ten percent in just three years (see Attachment B). As has been the case since the colleges were founded, the great majority of the graduates have stayed in the state to work following graduation, with most remaining in the region served by the college. SUNY's Public Service Office has been active in "networking" assistance for business and industry by identifying faculty from around the University for special training projects at community colleges. The Association of Community College Presidents, in an effort to emphasize the statewide impact of technical training for industry, has published a booklet (copy attached) entitled "30 Good Reasons Why Your Business Can Flourish in New York," which introduces the leaders of companies to the resources available at the community colleges.

In addition to the numerous examples of cooperative efforts between colleges and firms across the state, it should be noted that new initiatives, several directly related to high technology, are being planned. For example, in Rockland County, the college, county government, the Private Industry Council and the leaders of business and industry are contemplating the development of an industrial

incubator, funded jointly through public and private funds and administered by the college for the benefit of small businesses throughout the country and citizens seeking employment with high technology firms. A similar plan is being generated in the area of Corning Community College. Similarly, Dutchess Community College in Poughkeepsie has developed a comprehensive set of programs to assist the machine and computer industries of the region with both training programs for everyone from executives to on-line workers and consulting services in such areas of the design and testing of equipment.

The cooperative planning of the public community colleges and private industry reemphasizes the notion that such partnerships insure both philosophical and practical success.

The booklet, "30 Good Reasons . . . ." highlights the strength of community colleges which relate most directly to service to business and industry via training for technological occupations. The publication explains why these institutions are "varied, flexible, receptive, responsive and progressive." It enunciates how community colleges are in touch with the business community, are concerned for regional development, and are willing to create special programs for innovation.

In his report, "High Technology Parks: A Marriage of Higher Education and Industry," the Chairman of the State Senate Higher Education Committee, states: "A cooperative atmosphere between educational systems and industry is essential to the development of high technology . . . . Better articulation must develop between the two so that manpower training needs meet industry's demands." Within obvious financial constraints, the community colleges of SUNY agree with the Senator and are doing something about it. Such work is a part of their traditional mission, dating back to the technical institutes of the late 1940's. These institutions sense their historic roots and have continued to respond effectively to the shifting needs of business and industry.

The continued refinement and advancement of programs for technology will be the result of the spirit of invention which originally created community colleges, coupled with support of their efforts from leaders throughout State government.

Attachment A

AAS and AOS Programs Approved
by SUNY Board Since 1976

	AAS	AOS
1976:	Mechanical Technology, Mechanical Design option (Finger Lakes) Design and Drafting sub-option (Finger Lakes) Paralegal Assistant (Nassau) (Corning) Industrial Instrumentation Technology (Orange) Communications and Media Arts (Suffolk-S) Photographic Technology (Jamestown) Fire Protection Technology (Orange) (Jamestown) Apprentice Training (Dutchess) Nursing (Clinton) Medical Laboratory Technology (Dutchess)	Travel & Tourism (Jefferson)
1977:	Photographic Technology (Jamestown) Fine Arts (Mohawk Valley) Paralegal Assistant (Sullivan) Security Administration (HVCC) Safety and Security (Westchester) Ornamental Horticulture (CCFL) Landscape Development option (CCFL) Labor Studies (Erie) Science Laboratory Technology (CCFL) Fire Protection Technology (Schenectady) Science Laboratory Technology (TC3) Food Service Administration (Suffolk-E) Dietetic Technician (Nutrition Care) (Suffolk-E) Dental Laboratory Technology (Erie-S) Recreation Leadership (Onondaga) Apprentice Training (Rockland) Paralegal Assistant (Suffolk-S & W)	Aerospace Technology (Erie) Design Draftsman option (Erie) Food Service (Mohawk Valley)

Attachment A

AAS and AOS Programs Approved
by SUNY Board Since 1976

	AAS	AOS
1978:	Nursing (Westchester)	Automotive Technology (Apprentice Training) (Erie-S)
	Health Services and Paramedical Technologies (Westhcester)	Machine Tool Technology (Erie-S)
	Electrical Cosntruction and Maintenance (Erie)	
	Recreation Leadership (Sullivan)	
	Individual Studies (Broome)	
	Paralegal Assistant (Erie-C)	
	Science Laboratory Technology (Erie-C)	
	Automotive Technology (Erie-S)	
	Crafts Management (North Country)	
	Apprentice Training (Onondaga)	
	Community Service Assistant (Clinton)	
	Data Processing (Columbia-Greene)	
	Recreation Leadership (Mohawk Valley)	
	Electroencephalography Technology (Niagara)	
	Respiratory Therapy Technology (Onondaga)	
	Security Administration (Cayuga)	
	Drafting, Mechanical option (Erie-S)	
	Apprentice Training (Monroe)	
	Chemical Technology (Monroe)	
	Building Managment and Maintenance (Dutchess)	
	Data Processing, Management option (Onondaga)	
1979:	Food Service Administration (Dutchess) (Onondaga)	Building Management and Maintenance (Erie-C)
	Dietetic Technician (Nutrition Care) option (Dutchess)	
	Hotel Technology, Hospitality Management option (Genesee)	
	Occupational Therapy Assistant (Herkimer)	
	Industrial Technology, Quality and Reliability Technology option (Genesee)	
	Drafting, Mechanical, Industrial Process Piping suboption (Niagara)	

Attachment A

AAS and AOS Programs Approved
by SUNY Board Since 1976

	AAS	AOS
1979:	Ornamental Horticulture (Ulster) (Niagara)	
	Interpreter for the Deaf (Westchester)	
	Engineering (Tompkins Cortland)	
	Industrial Technology, Quality and Reliability Technology option (Monroe)	
	Electrical Technology (TC3)	
	Travel and Tourism (TC3)	
	Computer Technology (Cayuga) (Erie-S)	
	Automotive Technology (Columbia-Greene)	
	General Technology, Water and WastewaterTechnology option (Hudson Valley)	
	Mechanical and Engineering Technologies(Columbia-Greene)	
	Occupational Therapy Technologies, Health Services and Paramedical Technologies (Herkimer)	
	Data Processing, Programming and Systems option (Finger Lakes)	
	Medical Office Assistant (TC3)	
	Natural Science Technologies (Onondaga)	
	Telecommunications (Cayuga)	
	Fine and Applied Arts (Suffolk)	
	Individual Studies (Jefferson)	
	Data Processing (Broome)	
1980:	Paralegal Assistant (Cayuga)	Tool and Die Making (Broome)
	Medical Record Technology (Rockland)	
	Automotive Service Specialist (Broome)	
	Radio-Television Broadcasting (TC3)	
	Data Processing (Sullivan)	
	Individual Studies (Columbia-Greene)	

Attachment A

AAS and AOS Programs Approved
by SUNY Board Since 1976

	AAS	AOS
	Medical Laboratory Technology (Jefferson)	
	Medical Record Technology (Mohawk Valley)	
	Materials Science Technology (Herkimer)	
1981:	Design (Fashion), Interior Design option (Onondaga)(Suffolk)	Individual Studies (Fulton-Montgomery)
	Hotel Technology (Erie-C)	Food Service Administration (Hudson Valley)
	Woodworking (Jamestown)	
	Surgical Technology (Onondaga)	
	Data Processing (TC3)	
	Fine Arts (Westchester)	
	Chemical Technology, Plastics and Polymer option (Schenectady)	

Attachment B

Enrollment in Community College Career Degree Programs--1978-1980

Year	AAS	AOS	Total
1978	82,993	1,821	84,814
1979	86,648	1,947	88,595
1980	91,207	2,153	93,360

Attachment C

CONTRACT COURSE APPROVALS

Period: January 16 - February 19, 1982

College	Contracting Organization & Course	FTE	HC
Fashion Institute of Technology	NIKE (BRS Inc.) (Textile Fabrications Characteristics)	.5	16
Jamestown	American Sterilizer Company (Brake Operation Training)	.9	11
	Blumenthal Sporting Goods, Inc. (Salesmens' Training)	.7	15
Mohawk Valley	Revere Copper & Brass, Inc. (First Line Production Supervisor Training)	1	20
Monroe	Genesee Hospital (Basic College Writing)	1.9	19
	Genesee Hospital (Introductory Psychology)	1.3	13
	Rochester Gas & Electric (Time Management)	1.7	25
	Rochester Gas & Electric (Report Writing)	2	25
	Burroughs Corporation (Oral Communication and Listening)	.5	15
	Burroughs Corporation (Employee Appraisal)	.2	15
Niagara	N.Y.S. Electric and Gas Company (Interpersonal Communications)	1.1	25
	United Steelworkers of America (Contract Administration)	.7	250
Schenectady	General Electric Company (Survey of Electricity and its Application)	.3	15
Tompkins Cortland	Cortland Chapter of the International Management Club (Listening Skills for Managers)	2	18
	NCR Incorporated (Capital Justification & Decisionmaking)	2	20
	TOTALS (for the period 1/16 - 2/19	16.8	502
	GRAND TOTALS (to date)	475.7	38,580

Attachment C

CONTRACT COURSE APPROVALS

Period: December 19, 1981 - January 15, 1982

College	Contracting Organization & Course	FTE	HC
Broome	IBM Owego (Health Education Program)	.8	42
	IBM Endicott (Health Program)	1.5	65
	IBM (Personal Planning)	80.5	18,108
	Union Kol-Flo (CPR - SFA)	.3	18
	IBM (Personal Planning - Added Sessions)	37	8,322
	Endicott Johnson Corporation (CPR)	.2	30
	IBM (Standard Electrical Safety)	2.1	235
	IBM Owego (Stress Management for Secretaries)	.3	25
	IBM Endicott (Refresher Electrical Safety)	9.6	2,160
	IBM Endicott (Health Education Program)	20	1,112
	Four County Library System ("How to be an Effective Employee")	.2	40
	IBM Owego (Health Education Program)	4.4	206
	IBM (CPR)	28.4	1,600
	IBM (Standard Electrical Safety)	2.4	280
	Universal Instruments (Introduction to Data Processing)	.7	20
Corning	Sunmaster Corporation (Solar System Installation)	20	300

CONTRACT COURSE APPROVALS

Period: December 19, 1981 - January 15, 1982

College	Contracting Organization & Course	FTE	HC
Dutchess	Harris Semi-Conductor Division of Harris Corporation & IBM Corporation (Basic Cardiopulmonary Resuscitation)	19.2	1,260
		1.2	70
Fashion Institute of Technology	National Football League Properties (Elementary Textile Production)	.5	20
	International Playtex (Apparel Qualities)	.3	15
Community College of the Finger Lakes	Finger Lakes Area Hospital Corporation (Time Management for Hospital Personnel)	.2	30
	New York State Electric and Gas (Managing Stress)	.1	24
	Hartman Engineering (Supervisory Skills)	.6	14
Genesee	Motorola, Inc. (Supervisory Development A-1)	1.1	22
	Motolola, Inc. (Supervisory Development B-2)	1.1	22
Jamestown	Jamestown Manufacturing Association (Planning for Your Retirement)	2.8	26
	T.R.W. (Quality Motivational Presentation)	4.4	1,600
	Jamestown Metal Manufacturing (Industrial Blueprint Reading)	1.7	25
	Alcas Cutlery Corporation (Supervisory Training)	.9	26
Mohawk Valley	Mary Imogene Baptist Hospital (Shorthand I)	1.5	16
Monroe	Fairport Baptist Home (The Legacy of the Elderly)	3.9	30
	TOTALS (for the period 12/19 - 1/15)	247.9	35,763
	GRAND TOTALS (to date)	458.9	38,078

Attachment C

CONTRACT COURSE APPROVALS

Period: November 14 - December 18

College	Contracting Organization & Course	FTE	HC
Erie	Chevrolet Motor Division/Tonawanda (L-4 Engine Training Project)	128	1,400
Jamestown	Transportation Club (Advanced Tariffs)	.9	10
	Jamestown Labor/Management Committee (Communication Seminar)	.3	40
Mohawk Valley	Metropolitan Insurance Company (Effective Letter Writing)	1	32
	General Electric Co. (Introduction to Typing)	.3	20
Monroe	Burroughs Corporation (Time Management)	.2	10
	Burroughs Corporation (Effective Written Communications)	.3	12
	Burroughs Corporation (Leadership Styles)	.3	12
Onondaga	Crouse-Hinds Company (Training Course - Metallurgy)	2	20
Tompkins Cortland	New York State Electric and Gas (Written Communications)	4	20
	TOTALS (for the period 11/14 - 12/18)	137.3	1,576
	GRAND TOTALS (to date)	211	2,315

Attachment C

CONTRACT COURSE APPROVALS

Period: October 16 - November 13

College	Contracting Organization & Course	FTE	HC
Cayuga	Welch Allyn, Inc., Skaneateles, N.Y. (Training - Management Information Systems)	.3	22
Dutchess	Dutchess County Economic Development Cooperation (Quality Circles)	.5	60
Jamestown	Dalhstrom Manufacturing Cooperation (Brake Operation Training)	.7	10
Mohawk Valley	Stetson-Dale (Computer Based Graphics System)	2.3	50
Monroe	Rochester Products (Pre-Apprentice Training Program)	2.2	25
	Sybron/Taylor Instruments (Time Management)	.6	25
	Sybron/Taylor Instruments (Effective Written Communications)	.7	25
	Sybron/Taylor Instruments (Speed Reading)	.7	20
	Sybron/Taylor Instruments (Effective Leadership)	.5	20
	Detection Systems, Inc. (Supervising Today's Work Force Effectively)	.3	15
Orange	Riviera Products (Supervisory Training)	.5	12
Ulster	Kingston Trust Company (Time Management)	.5	75
	TOTALS (for the period 10/16 - 11/13)	9.8	359
	GRAND TOTALS (to date)	73.7	739

Attachment C

CONTRACT COURSE APPROVALS

Period: September 1 - October 15, 1981

College	Contracting Organization & Course	FTE	HC
Corning	Corning Glass Works (Writing Skills Modules)	1.7	20
	Trinity Valley Iron & Steel (Introduction to Metal Casting)	1.9	29
	N.Y.S. Electric and Gas Corporation (Electricity)	2.4	18
	N.Y.S. Electric and Gas Corporation (Sociology)	1.1	11
	Elcor, Marriott Manor Nursing Home (Introduction to Human Sexual Behavior in the Elderly)	0.5	15
Dutchess	International Business Machines Corporation (Equipment Maintenance Technician Program) Courses include:	35.0	30
	Digital Circuits Manufacturing Materials and Processes Electric Circuits Analog Electronivs Applied Mechanics Drafting for Engineering Technology I Technical Mathematics I Technical Mathematics II Physical Principles for Technicians		
Jamestown	Jamestown Manufacturer's Association (Supervisory Development Program - Industrial Safety)	.4	15
	Industry-Wide (Electrical Principles)	2.5	17
	Industry-Wide (Shop Math)	2.4	25
	Chase Interiors, Co. (Advanced Blueprint Reading)	1.7	25
	Manufacturing Association of the Jamestown Area (Supervisory Training Workshop)	0.9	25
	Carpenters Union Local 66 (Construction Estimating and Specifications)	3.5	40

CONTRACT COURSE APPROVALS

Period: September 1 - October 15, 1981

College	Contracting Organization & Course	FTE	HC
Schenectady	Golub Corporation (Business Math)	.5	30
Suffolk	Burroughs Corporation (Supervision: Concepts and Practices)	4.0	20
	Hi Temp Wire Inc. (Supervision: Concepts and Practices)	4.0	20
Ulster	VAW of America, Inc. (Team Management Skills and Techniques for Supervisors)	1.4	40
	TOTALS (to 10/15/81)	63.9	380

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